CLAIMS

1. A method for providing an enhanced level of indirection with respect to a resource attached to a destination, the method comprising the steps of:

comparing a content of a widelink directive with first parts of widelink entries stored in a translation table of a first storage system, the widelink directive generated and sent by a client to the first storage system within a first request to access the resource;

substituting the content of the widelink directive with a second part of a matching widelink entry indicating a correct path to the destination; and

establishing a connection from the client to the destination over the correct path to thereby provide the enhanced level of direction that enables access by the client to the requested resource.

2. The method of Claim 1 further comprising the steps of, prior to the step of substituting:

returning an error status to the client; and

in response to the error status, sending a second request from the client to the first storage system for a referral to a correct location of the resource.

3. The method of Claim 2 wherein the referral is a distributed file system (DFS) referral.

4. The method of Claim 3 wherein the client is a DFS-enabled common internet file system (CIFS) client.

5. The method of Claim 4 wherein the first storage system is a first filer.

6. The method of Claim 5 wherein the destination is a CIFS share including one of a second filer, a second storage system and a Windows server.

7. A memory of a first storage system containing data structures comprising:

a widelink directive generated by a first computer and sent to the first storage system for storage in the memory, the widelink directive having a content defined as an original path descriptor to a resource; and

a widelink entry structure adapted for storage in a symlink.translation table of the memory, the widelink entry structure having a multiple-part format, wherein a first part of the widelink entry is compared with the content of the widelink directive and, if a match is found, the content of the directive is substituted with a second part of the widelink to enable access to the resource on a second storage system.

8. The memory of Claim 7 wherein the first storage system is a first virtual filer (vfiler) of a filer and the second storage system is a second vfiler of the filer.

9. The memory of Claim 7 wherein the first storage system is a first protocol server of a multi-protocol filer and second storage system is a second protocol server of the multi-protocol filer.

10. The memory of Claim 9 wherein the resource is a unit of storage.

11. The memory of Claim 10 wherein the first computer is a common internet file system (CIFS) client computer and wherein the unit of storage is a CIFS share.

12. The memory of Claim 7 wherein the first storage system is a first filer and wherein the second storage system is a second filer.

13. The memory of Claim 12 wherein the resource is a unit of storage.

14. The memory of Claim 13 wherein the first computer is a common internet file system (CIFS) client computer and wherein the unit of storage is a CIFS share.

15. The memory of Claim 7 wherein the multiple-part format of the widelink entry
structure includes a third, optional part that ensures unique identification of the resource

16. The memory of Claim 15 wherein the third optional part comprises an @ symbol
signifying a qtree identifier.

17. A filer adapted to provide an enhanced level of indirection with respect to a resource
attached to a remotely configured destination, the filer comprising:
    a memory organized as storage locations to store data structures, including a
translation table having a plurality of entries;
    an operating system resident in the memory, the operating system including spe-
cial code configured to access the translation table in response to a widelink directive to
compare a content of the widelink directive with the entries of the table, the special code
further configured to provide a correct path to the resource attached to the remotely con-
figured destination in response to the content of the widelink directive matching a wide-
link entry of the translation table.

18. The filer of Claim 17 further comprising a processing element configured to execute
the operating system to thereby invoke network and storage access operations in response
to processing of the widelink directive and the matching widelink entry.

19. The filer of Claim 18 wherein the remotely configured destination is a common
internet file system (CIFS) share including one of a second filer, a multi-protocol storage
system and a Windows server.

20. Apparatus for providing an enhanced level of indirection with respect to a resource
attached to a destination, the apparatus comprising:
    means for comparing a content of a widelink directive with first parts of widelink
entries stored in a translation table of a storage system, the widelink directive generated
and sent by a client to the storage system within a first request to access the resource;

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6   if a match is found, means for returning an error message to the client;

7   in response to the error message, means for sending a second request from the cli-

8   ent to the storage system for a referral to a correct location of the resource;

9   in response to the second referral request, means for substituting the content of the

10   widelink directive with a second part of the matching widelink entry indicating a correct

11   path to the destination; and

12   means for establishing a connection from the client to the destination over the cor-

13   rect path to thereby provide the enhanced level of direction that enables access by the cli-

14   ent to the requested resource.

1   21. The apparatus of Claim 20 wherein the destination is remotely configured with re-

2   spect to the storage system.

1   22. The apparatus of Claim 21 wherein the remotely configured destination is a common

2   internet file system (CIFS) share including one of a multi-protocol filer, another storage

3   system and a Windows server.

1   23. A computer readable medium containing executable program instructions for pro-

2   viding an enhanced level of indirection with respect to a resource attached to a destina-

3   tion, the executable program instructions comprising program instructions for:

4   comparing a content of a widelink directive with first parts of widelink entries

5   stored in a translation table of a storage system, the widelink directive generated and sent

6   by a client to the storage system within a first request to access the resource;

7   if a match is found, returning an error message to the client;

8   in response to the error message, sending a second request from the client to the

9   storage system for a referral to a correct location of the resource;

10   in response to the second referral request, substituting the content of the widelink

11   directive with a second part of the matching widelink entry indicating a correct path to

12   the destination; and

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13   establishing a connection from the client to the destination over the correct path to

14   thereby provide the enhanced level of direction that enables access by the client to the

15   requested resource.

1   24. The computer readable medium of Claim 23 wherein the destination is remotely con-

2   figured with respect to the storage system.

1   25. The computer readable medium of Claim 24 wherein the remotely configured desti-

2   nation is a common internet file system (CIFS) share including one of a multi-protocol

3   filer, another storage system and a Windows server.